

ACTIVITY THREE: CONSTRUCTION DESIGN PROJECT

This activity gives students a glimpse into the world of architecture. They will examine floor plans and use math to determine which has the most efficient kitchen.

Associated Clusters:

Agriculture, Food, & Natural Resources
Science, Technology, Mathematics, & Engineering

Materials Provided:

5 reproducible floor plans (see following pages)

Materials Needed:

Rulers

To expand on this activity:

Consider bringing in a guest speaker to talk to the class about the importance of education in their career. Guest speakers might include architects, builders, drafters, etc.

Step 1: Collect floor plans

You'll need a floor plan that shows the location of the sink, stove, and refrigerator, and that includes a scale to determine distances. You can either copy the five floor plans included in this guide, or assign students to find their own plans on the web. The following websites provide printable floor plans:

www.Eplans.com

www.Coolhouseplans.com/index.html

www.houseplans.com

Step 2: Draw the work triangle

Floor plans for homes usually include the location of the sink, stove, and refrigerator in the kitchen. The walking path connecting each of these is called the work triangle of the kitchen. For an efficient kitchen design, it is recommended that the perimeter of the work triangle not be greater than 22 feet. Have your students draw the work triangle on each floor plan.

Step 3: Measure the perimeter of the triangle

Instruct students to carefully measure each side of the triangle, then add the sides together to determine the perimeter.

Step 4: Calculate the walking distance

Using the scale provided on the floor plan, have students find the actual walking distance of the work triangle. Remember that the scale will differ from floor plan to floor plan.

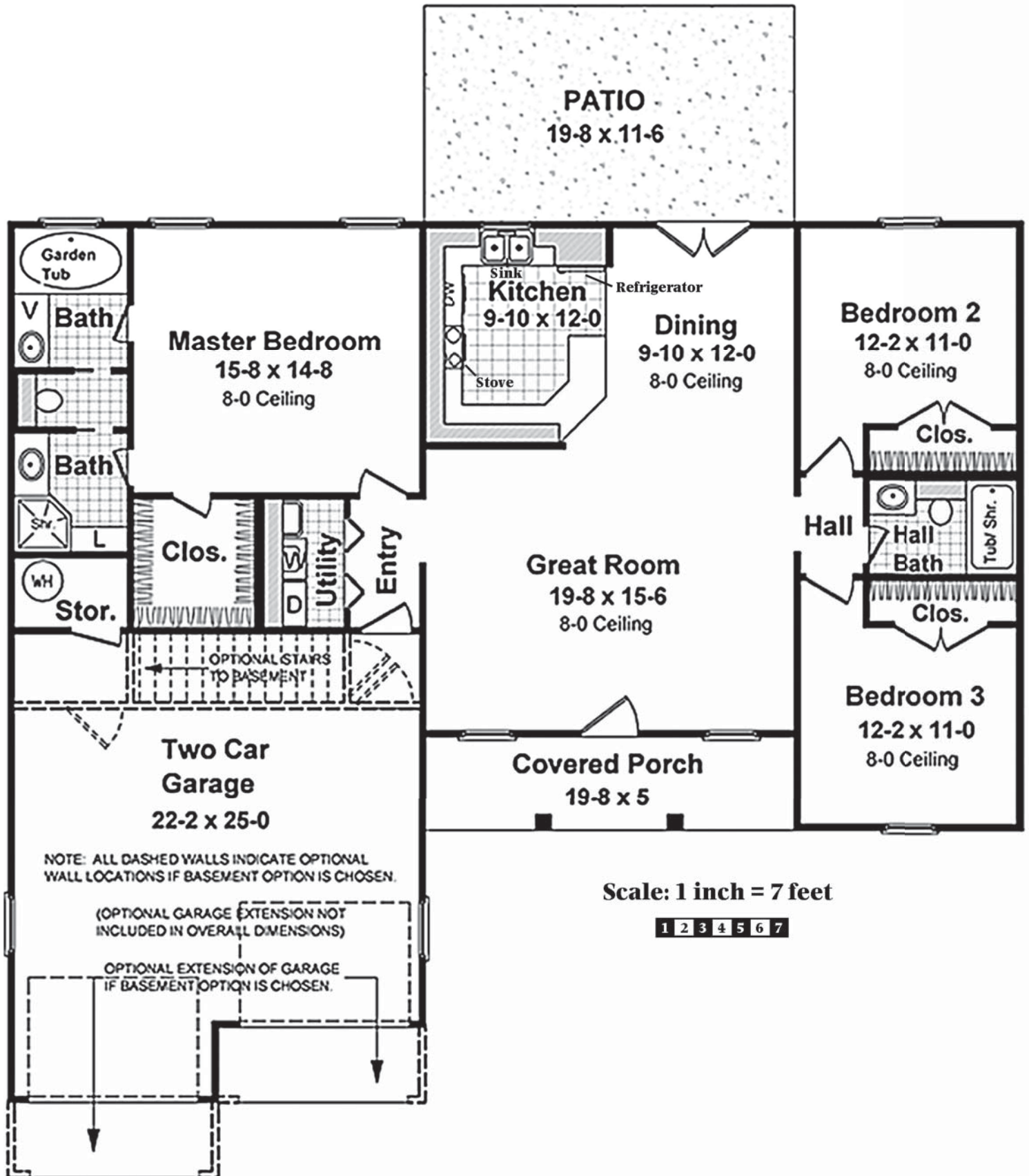
Step 5: Find the most efficient kitchen

Based on the walking distance, determine which house has the most efficient kitchen (i.e. the one with the shortest walking distance between appliances).

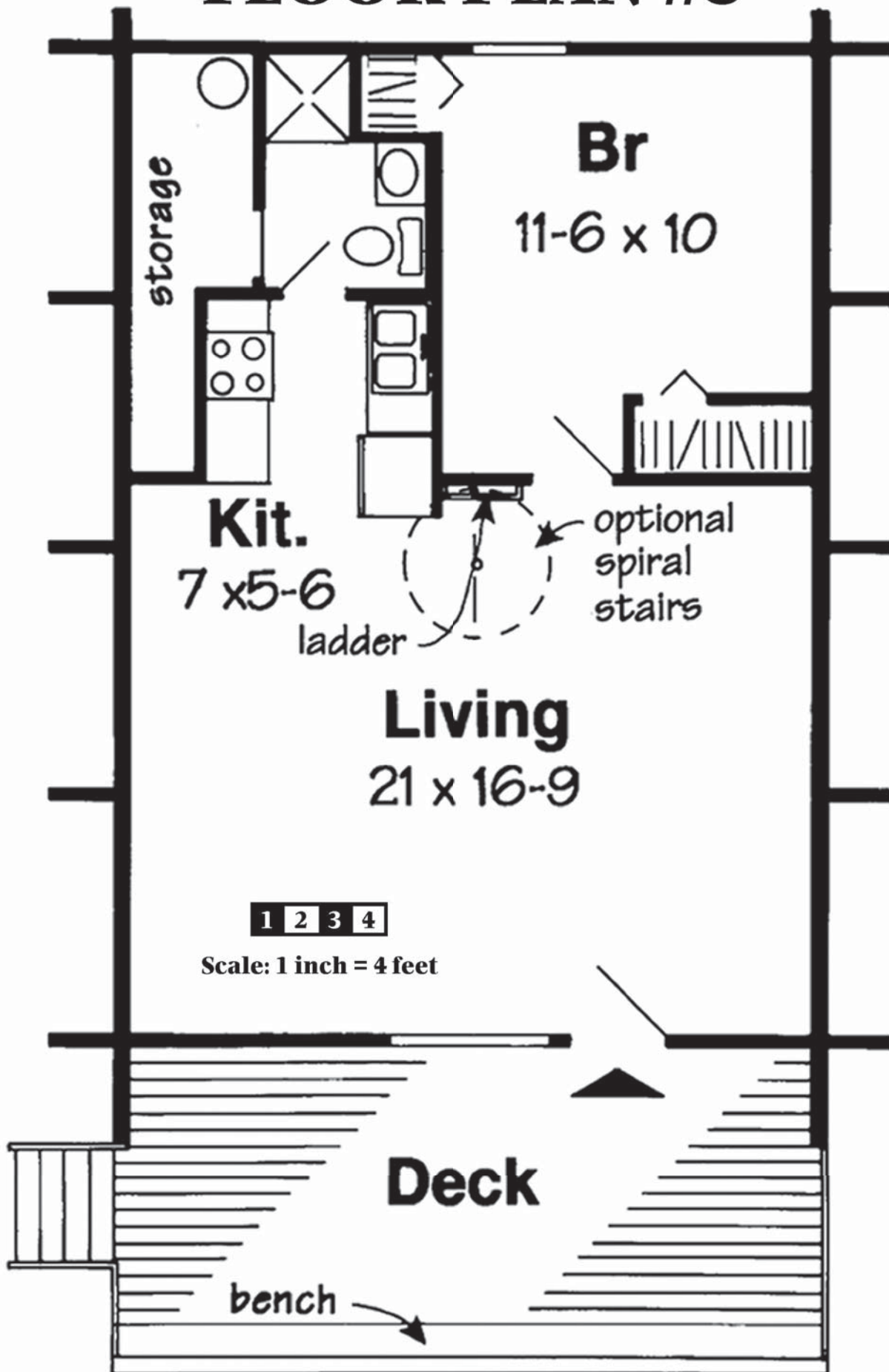
Step 6: Discussion

Discuss which class subjects were helpful in completing this activity, and how important education is for an architect, construction foreman, and drafter.

FLOOR PLAN #2



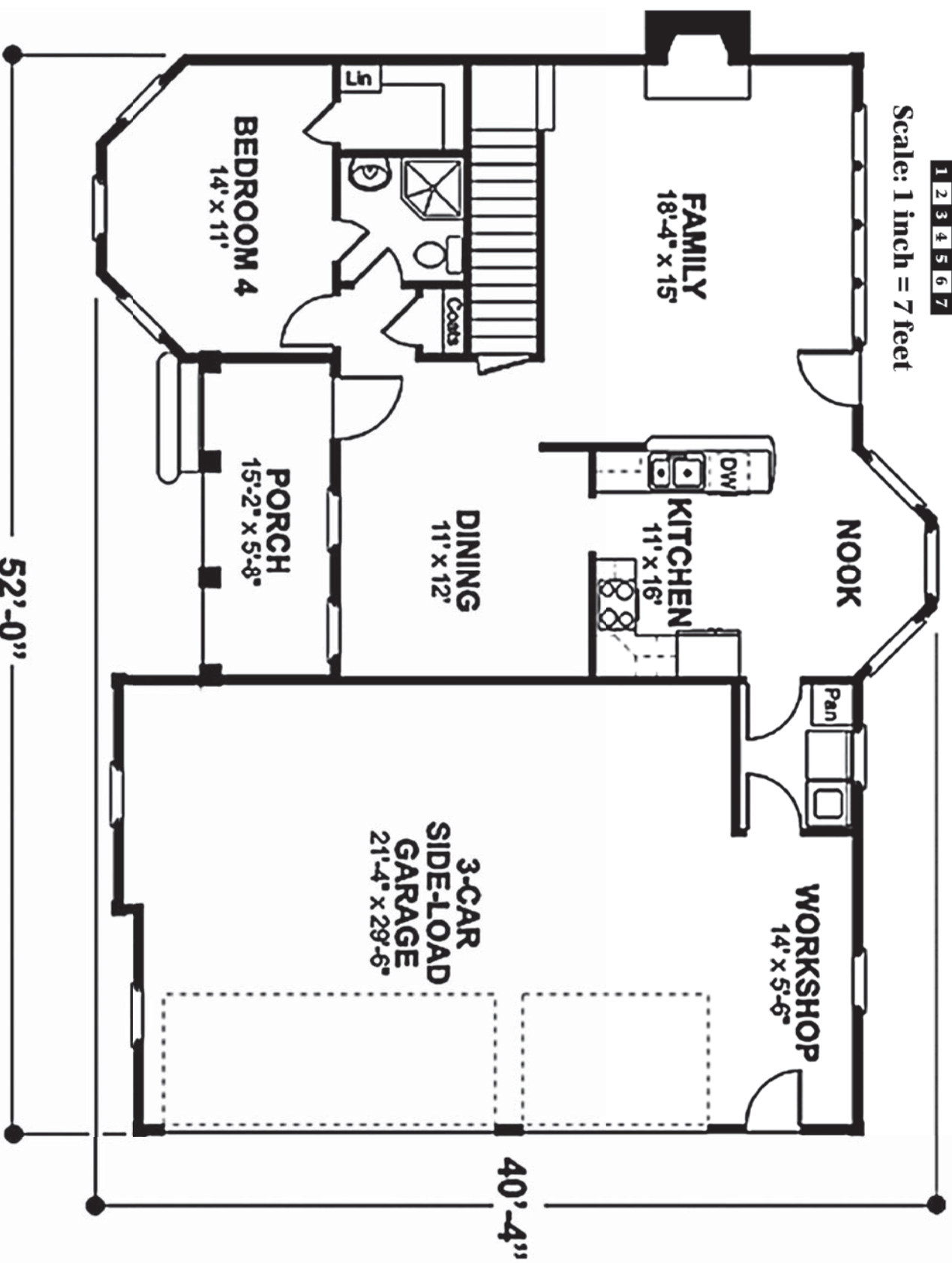
FLOOR PLAN #3



FLOOR PLAN #4

1 2 3 4 5 6 7

Scale: 1 inch = 7 feet



FLOOR PLAN #5

